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ABSTRACT

The population of this study included the 111 public school districts in Education Service Center Regions IV and VI, serving 22 counties of southeast Texas in the Houston area. Seventy-five questionnaires were returned from 111 school districts with a return rate of 68%. A total of 24,222 computers were reported in use by the 75 districts with a mean of 323 computers per district in 1991--up from 202 computers per district in 1989 and 86 computers per district in 1985. Of the 24,222 total computers, 13,379 (55%) were Apple IIe/IIgs; 2,802 (12%) were Macintosh; 720 (3%) were Commodore; 3,233 (13%) were IBM clones; 2,749 (11%) were IBM; 720 (3%) were TRS 80; and 715 (3%) were other brands. The estimated mean computer literacy rate for teachers in the districts was 54% with the range from 10% to 100%. The mean number of computer labs in a school district was 10 labs with the range from 1 to 85. Fifty-three of the 75 school districts (70%) indicated that they had networked computers. (Contains 9 references.) (Author)

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COMPUTERS IN SCHOOLS OF SOUTHEAST TEXAS IN 1991

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ABSTRACT

The population of this study included the 111 public school districts in Education Service Center Regions IV and VI. These centers serve twenty-two counties of southeast Texas in the Houston area. Seventy-five questionnaires were returned from 111 school districts with a return rate of 68%. A total of 24,222 computers were reported in use by the 75 districts with a mean of 323 computers per district in 1991; up from 202 computers per district in 1989 and 86 computers per district in 1985. Of the 24,222 total computers, 13,379 (55%) were **Apple IIe/IIgs**; 2802 (12%) were **Macintosh**, 720 (3%) were **Commodore**; 3233 (13%) were **IBM clones;** 2749 (11%) were **IBM**; 720 (3%) were **TRS 80**; and 715 (3%) were **other brands**. The estimated mean computer literacy rate for teachers in the districts was 54% with the range from 10% to 100%. The mean number of computer labs in a school district was 10 labs with the range from 1 to 85. Fifty-three of the 75 school district (70%) indicated that they had networked computers.

COMPUTERS IN THE SCHOOLS OF SOUTHEAST TEXAS IN 1991

Purpose of the Study

During the past decade, computers in schools became a complex and controversial topic while placing new demands on educators. If the potential of educational computing goes unrealized, educators will inevitably be criticized for failing to prepare students for the future. Lezotte's (1980) "Effective Schools" said educators must change the curriculum as the country moves out of the Industrial Age into the Information Age. High school graduates in the 1990's will be expected to be proficient at processing information and solving problems by utilizing modern equipment. Acceptance of this emerging technology is gratifying, but the technology itself is costly.

The next few years are crucial for the future of education and educational computing. Their combined fate depends to a large extent on careful planning. Purchase decisions have to be made with care as schools face monetary restrictions. Decisions have to be made as to how many computers will be bought, which brand should be selected, and how the school will manage to pay for the privilege of using them (Young, 1988).

The purpose of this study was to provide educators with the data necessary to make a knowledgeable decision in relation to the purchase of computer hardware for education. Data were gathered concerning brands of computers presently in use, percent of computer literacy among faculty, number of computer labs in the school districts, use of computer networking in labs, and brands of computers by grade level.

Review of the Literature

According to NEA Today, (Adams,1989) schools spent $2 billion on computers but this was only 0.2% of school budgets. That amount was for 1.7 million computers purchased in the past decade. Schools spent $153 million on software in 1990. By 1990, two million computers were in US schools with about 95% of the schools having at least one computer with the ratio of computers to

students at 1:22 (ASCD Update, 1990). In 1981, only 18% of the schools had computers for instructional purposes.

> Thirty-two percent of districts questioned had computers aged five years or older, according to a 1990-91 survey of K-12 public school districts. I think we're going to see the emphasis change from the Apple II series to the Macintosh. The trend now is heading toward Macintosh it seems, even in grades K-8. The Macintosh LC is starting to come around. The ability to run Apple IIe software on the Mac LC has been innovative. Some schools have 500 programs and they are not going to throw away that software for the IBM. Schools are buying IBM, especially in high school business classes. (Computer Reseller News, 1991, p. 134)

In a study (80% of 2105 questionnaires returned) of computers in schools in a southeast Texas suburban school district, the teachers indicated the following:

1. 83% were female teachers
2. 37% own a computer
3. 58% use the computer at school
4. 79% have access to a computer for instruction purposes
5. 77% consider themselves a computer beginner
6. 28% feel comfortable with computer knowledge
7. 92% feel the computer is a valuable tool for education
8. 73% indicated there was not enough hardware
9. 38% said they were afraid of the computer (Lusk, 1989).

A report on teachers, training, and technology by Scrogan (1989, p. 80) indicated the following trends:

1. Technology's potential is largely unexploited
2. The role of the classroom teacher is critical.
3. Most teachers want to learn technology
4. Adopting technology is complex
5. Technology makes teaching more challenging before it makes it easier.

He also said there are eight keys for successful training of teachers:

1. Emphasize hands-on training
2. Use credible instructors
3. Build in close support
4. Increase access time
5. Build a "tool" focus
6. Integrate technology
7. Go online
8. Don't leave home without one.

Gary Bitter, a nationally know author, writing in Computers in Education (1992, p. 151) stated that a required computer literacy course should cover the following topics:

1. The microcomputer in education
2. The history of computer use
3. The microcomputer system: hardware and software
4. Methods, curriculum, and the microcomputer
5. Word processing
6. Spreadsheets
8. Data bases
9. Graphics
10. Telecommunication and integrating software
11. Computer assisted instruction
12. Choosing software for the classroom
13. Ethics and social concerns of computer use
14. Trends in teaching with computers.

Dede (1989, p. 7) gave these guidelines in planning for purchases:

1. Don't buy anything until you have determined why you want it
2. Never believe something is available until you see it working
3. Pioneering a product is a mixed blessing
4. Compatibility has hidden headaches
5. No single product or vendor is best for all situations
6. Developing software is harder than you expect
7. Deciding what to buy is only the start of the purchasing process

8. Innovation requires a critical mass
9. Initial costs are just the tip of the iceberg
10. Technology changes individuals and organizations
11. No matter how much you buy, you won't have enough
12. Wisely chosen products are never obsolete
13. Never taking risk guarantees failure.

Within the next five years, educators will look for ways to integrate microcomputers into the school curriculum because of mandates such as those from the 1984 Texas Legislature related to computer literacy in the junior high school and the TEA mandated "Long Range Plan for Technology".

Methods and Procedures

The population of this study included the 111 school districts in Education Service Center Regions IV and VI. These centers serve twenty-two counties of southeast Texas in the Houston area. Seventy-five questionnaires were returned from 111 school districts with a return rate of 68%.

*** insert Figure 1 here ***

A total of 24,222 computers were reported in use by the 75 districts with a mean of 323 computers per district in 1991; up from 202 computers per district in 1989 and 86 computers per district in 1985. Of the 24,222 total computers, 13,379 (55%) were **Apple IIe/IIgs**; 2802 (12%) were **Macintosh**, 720 (3%) were **Commodore**; 3233 (13%) were **IBM clones;** 2749 (11%) were **IBM**; 720 (3%) were **TRS 80**; and 715 (3%) were other brands.

*** insert Table 1 here ***

The estimated mean computer literacy rate for teachers in the districts was 54% with the range from 10% to 100%. The mean number of computer labs in a school district was 10 labs with the range from 1 to 85. Fifty-three of the 75 school district (70%) indicated that they had networked computers.

Conclusions

From the results of the study, several general conclusions can be made. First, it was apparent that Apple Computers were preferred at all grade levels in the school districts serviced by Education Service Centers Region IV and VI. The bidding arrangement for Apple Computers through Education Service Center Region IV starting in 1981 and the present Apple State Contract make Apple the educational computer of choice. Most computer vendors now offer a similar 40% discount from list price. About half of the teachers are computer literate, there are 10 computer labs per district, and 70% of the labs are networked.

The status of microcomputers in education changes very rapidly. In addition, the computer market itself changes constantly and unpredictably. Because of the changes, continual research in the field of educational computing is needed.

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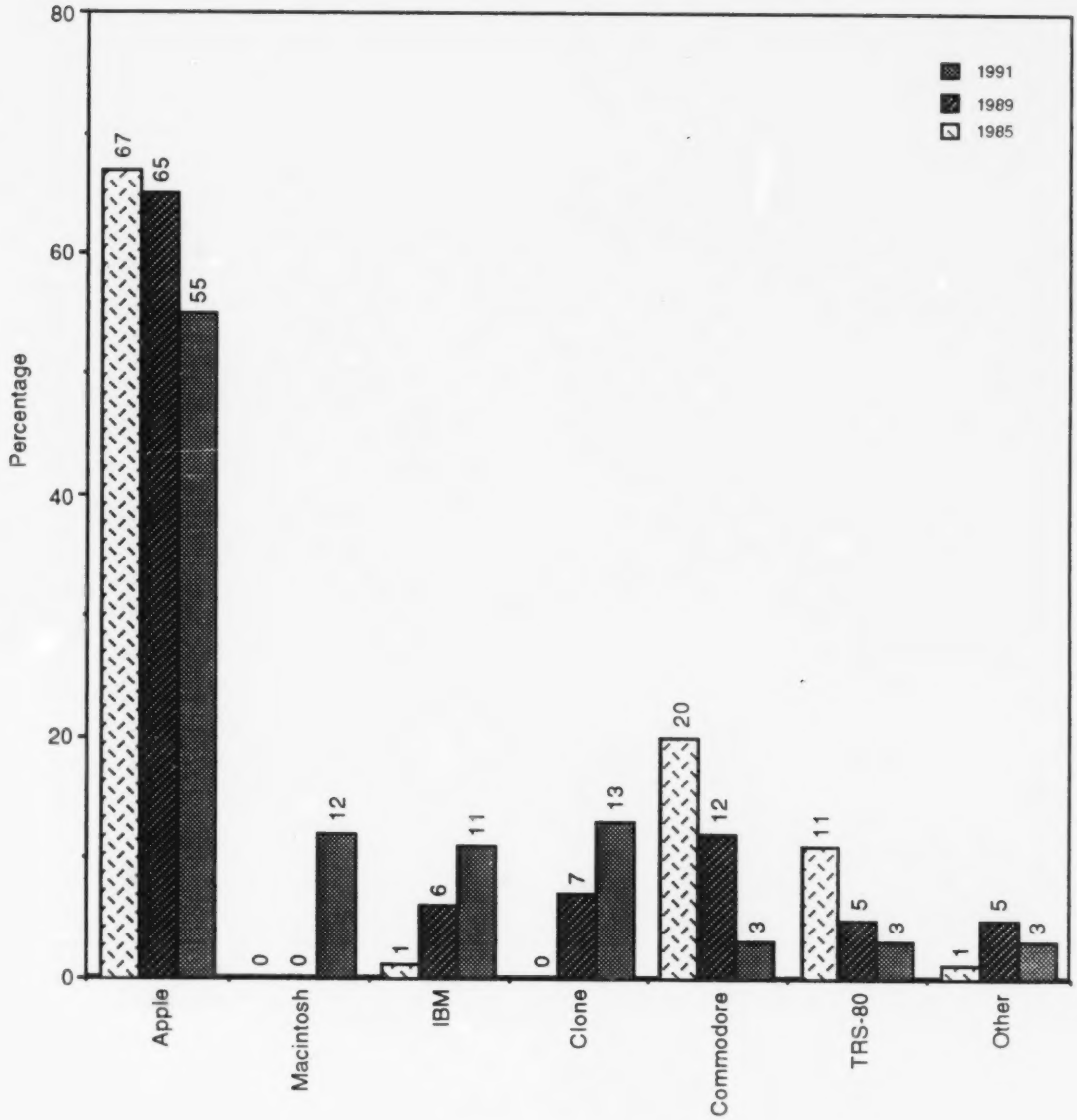

Figure 1
Computers in Schools of Southeast Texas

Table 1

Brands of Computers in Southeast Texas Schools in 1991

COMPUTER	ELEMENTARY	JUNIOR HIGH	HIGH SCHOOL	TOTAL	PERCENT
Apple	6819	3627	2933	13,379	55%
Macintosh	561	960	1281	2802	12%
IBM	800	583	1366	2749	11%
IBM Clone	395	610	2228	3233	13%
Commodore	460	135	29	624	3%
TRS 80	211	275	234	720	3%
Others	228	38	449	715	3%

MICROCOMPUTRES IN EDUCATIONAL SETTING

DIRECTIONS: Please indicate what brands and the total you have at each level.

ELEMENTARY:

Apple IIe, IIc, IIGS ..... How many? ...
Apple Macintosh .....How many? ...
IBM .....How many? ...
IBM Clone.....How many? ...
Commodore .....How many? ...
TRS-80.....How many? ...
Others .....How many? ...
(What brand?) _____

JUNIOR HIGH SCHOOL (Intermediate):

Apple IIe, IIc, IIGS ..... How many? ...
Apple Macintosh .....How many? ...
IBM .....How many? ...
IBM Clone.....How many? ...
Commodore .....How many? ...
TRS-80.....How many? ...
Others .....How many? ...
(What brand?) _____

HIGH SCHOOL:

Apple IIe, IIc, IIGS ..... How many? ...
Apple Macintosh .....How many? ...
IBM .....How many? ...
IBM Clone.....How many? ...
Commodore .....How many? ...
TRS-80.....How many? ...
Others .....How many? ...
(What brand?) _____

1. Make an estimate of the percent of teachers in your district who know how to use the computer (computer literate)?..... _____%

2. How many computer labs are in your district? ..... _____

3. Do you have computer labs that are networked? ..... Yes No